PAGs MANUAL UPDATE

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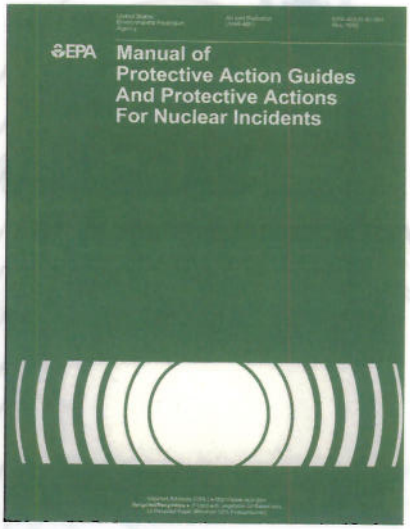
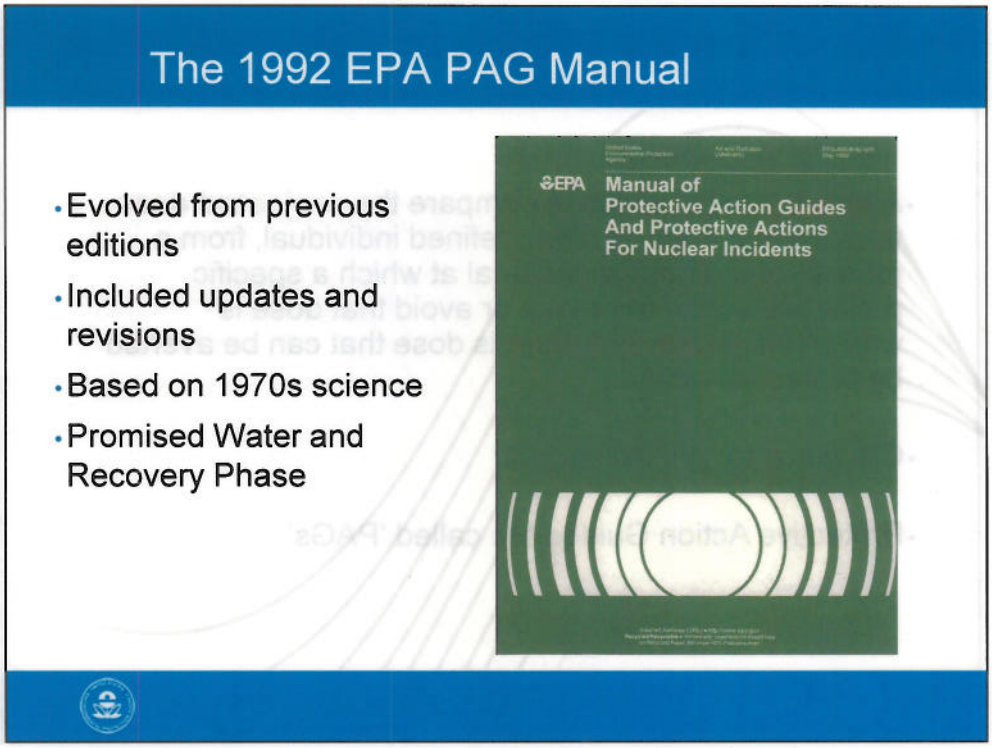
1992 EPA PAGs Manual

- Still useful
- Focuses on nuclear power plant incidents
- Promises Water and Late Phase (cleanup) guidance





Providing guidance to other federal agencies on radiation exposure limits was one of the responsibilities delegated to the EPA upon its formation in 1970. Under regulations governing radiological emergency planning and preparedness issued by the Federal Emergency Management Agency (FEMA) in 1982, EPA was given the responsibilities to (1) establish Protective Action Guides (PAGs) (2) prepare guidance on implementing PAGs and (3) develop and promulgate guidance to State and local governments on the preparation of emergency response plans2. In carrying out these responsibilities, EPA previously published PAGs, the most recent being the 1992 Manual of Protective Action Guides and Protective Actions for Nuclear Incidents. The guidance was very nuclear power plant – centric. Other incidents were considered lesser, and if the power plant was covered, so would all other incidents/events/accidents

What is a Protective Action Guide?

- A **value** against which to compare the **projected dose** to reference man, or other defined individual, from a release of radioactive material at which a specific protective action to reduce or avoid that dose is warranted. **Projected dose** is dose that can be averted by protective action.
- Guidance for public officials.
- Protective Action Guides are called 'PAGs'

Incident Response Phases

- Early Phase: The first hours to days until the release has stopped, when protective actions decisions must be made with little to no information
- Intermediate Phase: The weeks to months when more information is available, protective actions are more restrictive, and cleanup planning begins
- Late Phase: No longer an emergency response; activities shift to long term recovery and cleanup

Early Phase

- Evacuation/Shelter 1-5 rem (10-50 mSv)
- KI 25 rem (250 mSv) adult thyroid dose
- Worker 5, 10, 25+ rem (50, 100, 250+ mSv)

Intermediate Phase

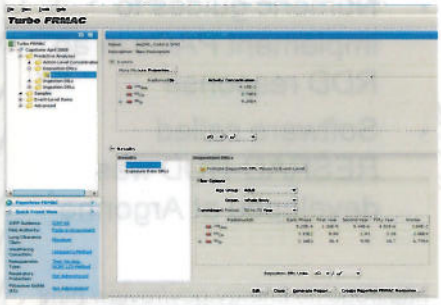
- Relocate population
  - ≥ 2 rem (20 mSv) first year (projected dose)
  - 0.5 rem (5 mSv) any subsequent year
- Apply dose reduction techniques
  - < 2 rem (20 mSv)
- Food (FDA 1998): Most limiting of
  - 0.5 rem (5 mSv) whole body or
  - 5 rem (50 mSv) to most exposed organ or tissue
- Drinking Water: Safe Drinking Water Act proposed

Late Phase

- Dept. of Homeland Security provided guidance for cleanup after a terrorist event: "Optimization" – a process rather than a cleanup number
- Existing cleanup programs may also be used, such as CERCLA or state environmental regulations

Use the Best Available Guides & Tools

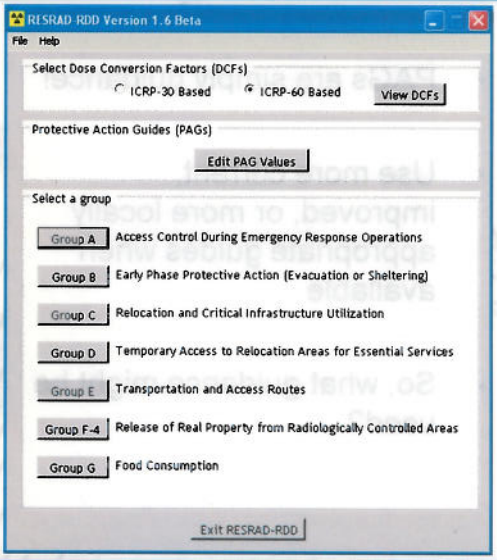
- PAGs are simply guidance!
- Use more current, improved, or more locally appropriate guides when available
- So, what guidance might be used?

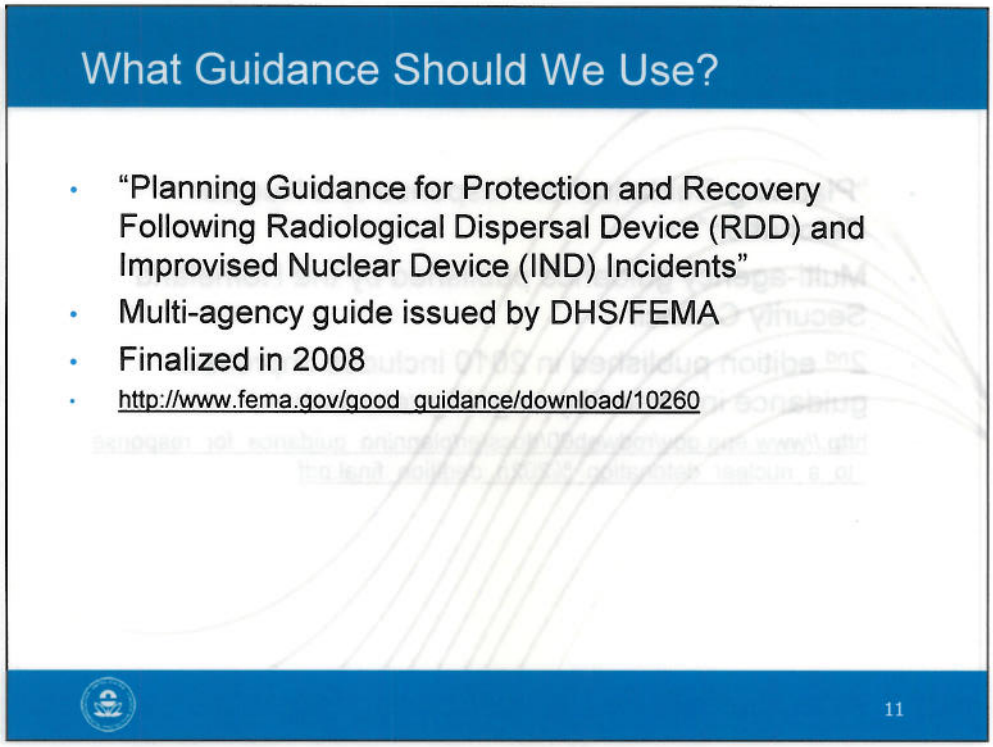


Use the Best Available Guides & Tools

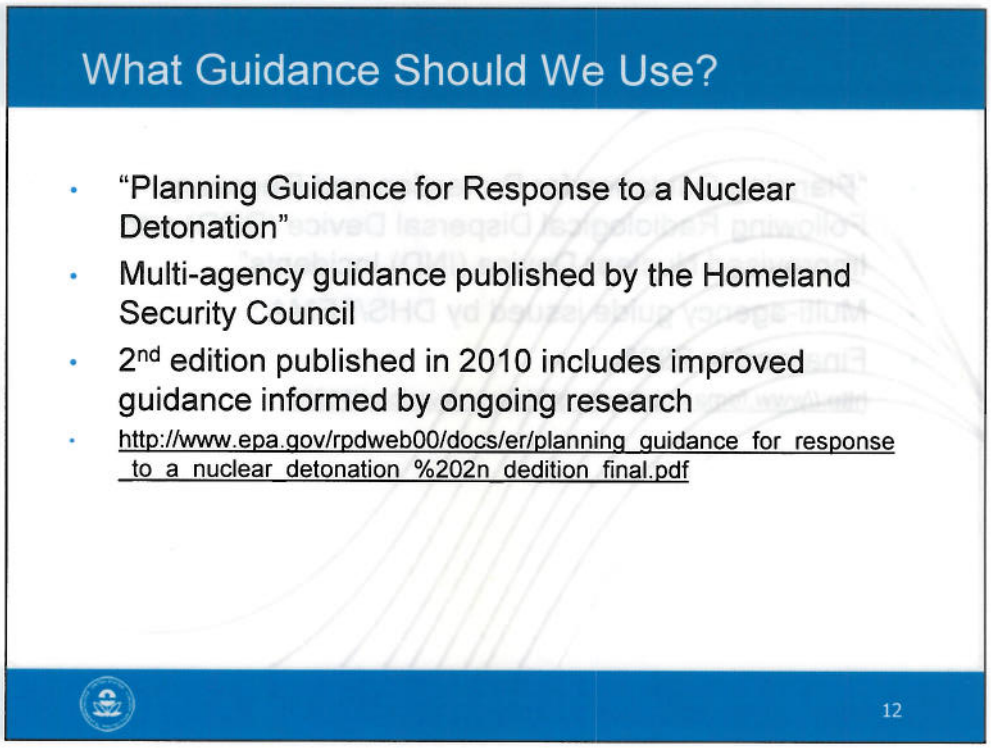
- Operational Guidelines
- Numeric guides to implement PAGs in an RDD response
- Software called RESRAD-RDD was developed at Argonne

http://ogcms.energy.gov/review.html





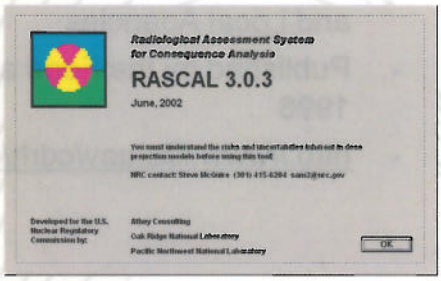
This one validates using the existing EPA PAGs for RDDs, INDs, and provides newly developed guidance for the Late Phase… which was lacking in the 1992 EPA PAGs Manual…



This one gives specific advice for planners thinking about unique challenges for response in the first days after an urban nuclear detonation…

What Guidance Should We Use?

- Potassium Iodide (KI) guidance
- Issued by the Food and Drug Administration in 2001
  http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/ucm080542.pdf
- Frequently Asked Questions about KI
  http://www.fda.gov/Drugs/EmergencyPreparedness/BioterrorismandDrugPreparedness/ucm072265.htm



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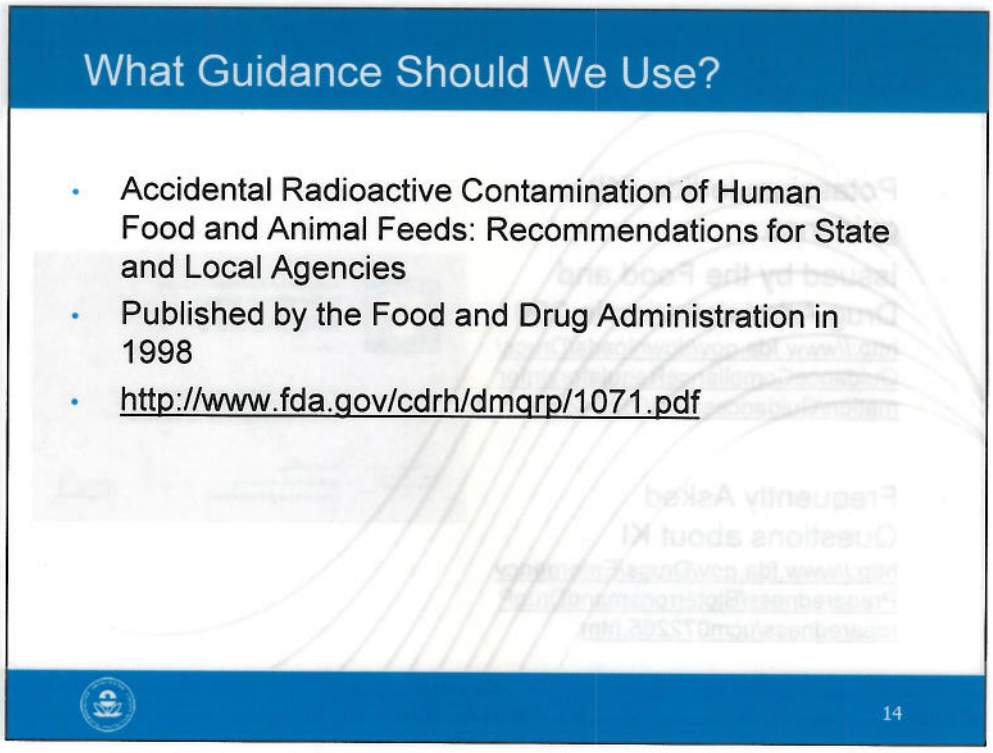
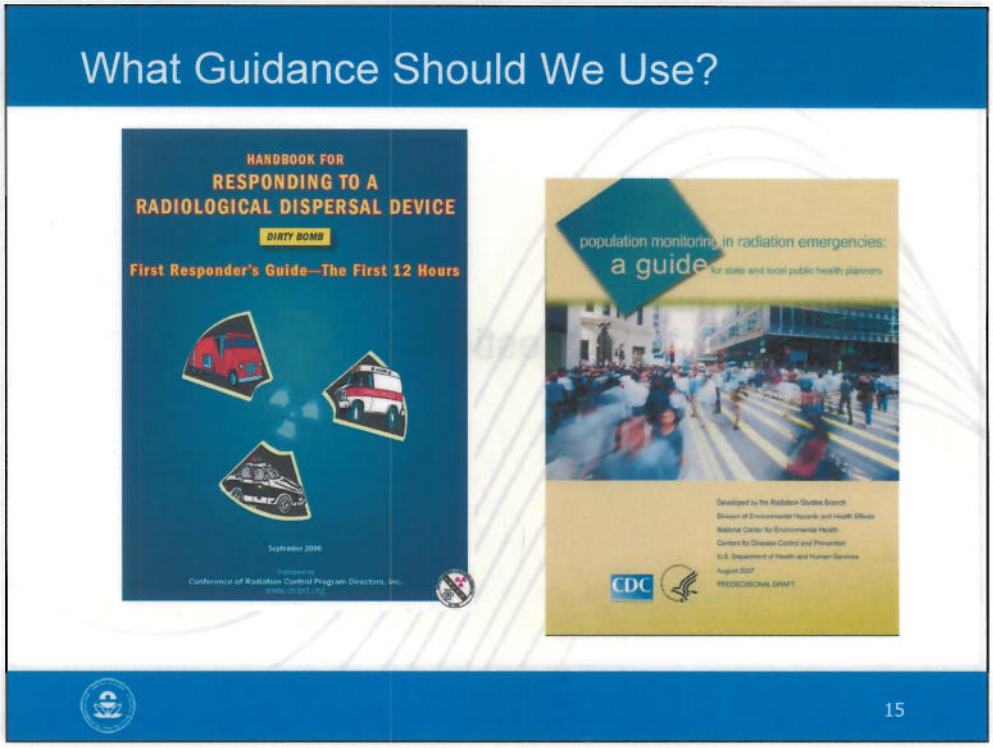
This KI guidance is more current than what is reprinted in the 1992 PAGs Manual – so many of you already use it.



This Food PAG guidance is more current than what is reprinted in the 1992 PAGs Manual – so many of you already use it.



Here are some practical implementation guides for operations in a radiation response!

Questions?